futurity, and tell what shall be the end of these manifold and in many instances inexplicable changes.

What becomes of the wild theories of Liebig, when we rightly consider the phenomena of the fossil and mineral kingdoms? Animals and vegetables are incessantly employed in elaborating consolidated matter, abstracting their material from the elements of air and water; they die, but their labours survive them; they have added to the earth during the whole period of their existence, they now in death contribute their bodies to its further increase, and as though still animated, they still go on abstracting gaseous, nëriform, or fluid matter from the medium in which they are placed. Look at the earth in which you daily tread, what is it but the relics of once living generations, inhabiting land or waters? The organic beds, absorbing oxygen from the atmosphere, become more dense in their structure, or changing in their atomic disposition and combinations, turn into things of another name and nature. Chains of mountains are wholly composed of organic exuviæ of the ocean, and the vast plains built up of this material are covered by perhaps equally vast accumulations of animals and vegetables of the dry land, of lakes, rivers, and streams. To oxydate the vast surface beds, to convert farinaceous chalk into other and more ponderous bodies, infers a continuous absorption of the elements of air and water, to the incessant and positive loss of the latter, nor are there any analogous processes by which these elements in their quantities can be replaced.

The chalk ranges of Europe are very extensive, constituting a vast portion of the superficial soil; they attest, not only to the high antiquity of the strata, but also exemplify the means taken by Nature to attain the end. When we observe a reef of coral or bed of calcareous earth forming beneath tropical waters, we cannot fail to identify the continuous increase of the earth with the continuous increase of life. We acknowledge genera, orders, and species in their various stages of decay and change, or preserved from the one or the other, maintaining their characteristic form and qualities through amazing long intervals of time; the reef, or land above the waters, presents to us the same composition and character at whatever elevation it may be, assuming gradually forms, and entering into combinations differing somewhat from the preceding, from the circumstance of being placed in another medium, and consequently the passive subject of other action manifest upon them, but there can be no mistake as to the identity of origin. Again, we find them disposed within cold and temperate regions, where they never could have existed in their living state, and forming the entire earth appropriated to the uses of man: sometimes in no respect differing either in genera, orders, or species from the now inhabitants of tropic seas; at other times presenting varieties which elicit our admiration, and create endless conjectures concerning the epochs in which they lived, and the causes of their removal from climes within which alone they could have existed.

(To be continued.)

BRITISH ARCHÆOLOGICAL ASSOCIATION.

The first meeting of a new society called "The British Archæological Association" was held at Canterbury on Monday, the 9th inst., in the Town Hall of this fine old cathedral city. "The chief objects of the meeting," we are told in the printed prospectus of the general committee, "are to promote a personal intercourse between antiquarian and historical inquirers who reside in different parts of the country and abroad, and to afford a week's amusement and instruction by the reading and discussing of papers on antiquarian and historical subjects before the different sections, and visiting and examining together the antiquities of the locality."

The first place selected was Canterbury, a city rich in its antiquities, possessing a fine cathedral, exhibiting a long series of successive changes in the historical features of Gothic architecture, with many buildings fast going to decay, or more speedy ruin, under the hand of ignorant restoration, with many interesting churches in its immediate vicinity, and adjoining downs, abounding in the rude grave hillocks —the Saxon barrows of English antiquaries.

The meeting was divided into four sections; 1. Primeval, 2. Medieval, 3. Architectural, and 4. Historical. The architectural section met on Wednesday evening, when the president, the Rev. Robert Willis, Jacksonian Professor of Cambridge, read a translation which he had made of the account of Canterbury Cathedral, written in 1174, by one Gervase, a monk of Canterbury. He exhibited at the same time a block plan of the Cathedral, and contrasted as he went on the building described by Gervase with the building as we now see it. His style of delivering his matter and his manner were equally pleasing. A communication from Mr. Repton was read, containing some remarks on Roman and Saxon columns, and Mr. Godwin exhibited a curious collection of masons' marks, which he had copied from the cathedrals of Cologne, Strasburg, Gloucester, and Canterbury. He had found, he said, the same marks in use in all countries, they were still fresh on our cathedral walls, and in a conversation with a mason, that morning at work in the Canterbury Cathedral, he found that many masons (all who were Freemasons) had their mystic marks handed down from generation to generation. The mason he, Mr. Godwin, had conversed with, had got his mark from his father or master, and he again from his father or master.

The Rev. Mr. Hartshorn read a paper on the castles and military antiquities of Kent, and Mr. A. Booth gave a description of a triangular bridge, and a stone on which was an unknown inscription at Crowland, in Lincolnshire. The proceedings of the day terminated in a *conversazione* at the assembly-rooms.

NEW CEMENT FOR BUILDERS.

Mr. Austin, of Hatton Garden, has recently taken out a patent for "*a new method of glueing or cementing certain materials for building and other purposes.*" The mode of manufacturing and applying it is thus described in the specification:—

"The cement used by the patentee is made by mixing India-rubber with cold naphtha, in the proportion of eight ounces of India-rubber cut into small pieces to each gallon of naphtha, stirring it from time to time until the India-rubber is dissolved; then to one part by weight of this mixture two parts of lac are added, and the whole is thoroughly blended together by the application of heat, accompanied with occasional stirring. When greater elasticity is required, a larger proportion of the India-rubber solution is used; if greater hardness is necessary, a larger proportion of lac is employed; and where the India-rubber would be liable to injury from great exposure and pressure, a much less proportion is used, and it is sometimes dispensed with altogether; asphalte, pitch, or resin, or other materials of that nature, may in some instances be substituted for the lac.

"The materials for building purposes to which this cement is applied are slate, tiles, stone, glass, and metal plates. When being used, the cement is kept in a heated state in a dish or vessel containing a narrow trough, termed a stamper, which slides up and down therein between guides; the slate or other material is brought to the heat of 150 degrees Fahr., and placed upon the dish, and the stamper being then raised, imprints or stamps a margin of cement thereon. The requisite margins of cement for forming overlapping joints being thus applied to the slate or other material, the cemented portions or margins are laid in contact with each other, and in a short time become firmly united, forming water-tight surfaces. Sometimes, to expedite the process, a coating of naphtha or other spirit that will act upon the cement, or a solution made by dissolving the cement in naphtha or other spirit, is applied to the cemented portions or margins. The cement may also be used for securing the above materials to the building as well as to each other.

"The patentee connects pieces of glass together with the above cement when making skylights, conservatories, frames for horticultural purposes, &c.; he also cements slate, stone, metal, and manufactured clays and cements together, or to wood, or to woven and other fabrics, and woven or other fabrics to wood, for building and other purposes; he likewise cements pieces of leather together for making boots and shoes, and hose or pipes for fire-engines; also leather and cork together, or to wood, metal, or woven or other fabrics, and woven or other fabrics to wood for the manufacture of trunks, portmanteaus, packing-cases, and other purposes. When joining these materials, the parts must be dry and free from dust, and should be warmed previous to receiving a coat of the cement, in order that it may not be chilled at the moment of application. If the joint is to be made at once, the parts must be expeditiously put together and pressed, as the cement rapidly loses its heat, and becomes solidified, but the junction may be effected at any subsequent period by the application of heat, or the spirit or solution before described."—*Newton's London Journal for August.*

THE EARL OF ROSSE'S LEVIATHAN TELESCOPE.

(From the *Standard.*)

TO THE EDITOR OF THE STANDARD.

Sir,—With pure delight do I communicate to you the fact that the leviathan telescope, on which the Earl of Rosse has been toiling in his demesne at Parsonstown now upwards of two years, although not absolutely finished, was on Wednesday last directed for the first time to the sidereal heavens. I very much regret not being present on this occasion, but experiments on which I have for many years been employed rendered it impossible for me to leave home.

The letter which I have this morning received from its noble maker, in his usual unassuming style, merely states, that the metal, only just polished, was of a pretty good figure, and that with a power of 500, the nebula known as No. 2 of Messier's catalogue was even more magnificent than the Nebula No. 13 of Messier, when seen with his lordship's telescope of 3 feet diameter, and 27 feet focus. Cloudy weather prevented him turning the leviathan on any other nebulous object.

Thus, then, we have, thank God, all danger of the metal breaking before it could be polished overcome. Little more, however, will be done to it or with it for some weeks, inasmuch as the noble earl is on the eve of quitting Ireland for England, to resign at York his post as President of the British Association, and to visit his noble relatives at Kilnwick and at Brighton. This done, he returns to Ireland: and I look forward with intense anxiety to witness its first severe trial, when all its various appointments shall be completed, in the confidence that those who may then be present will see with it what man has never seen before. The diameter of the large metal is six feet, and its focus 54 feet. Yet the immese mass is manageable by one man. Compared with it, the working telescopes of Sir William Herschel, which in his hands conferred on astronomy such inestimable service, and on himself astronomical immortality, were but playthings.

J. South.

Observatory, Kensington, Sept. 17.

Chinese Dwellings.—In all China the houses are built upon the ground, *i. e.*, without any cellar under them. The apartments are paved with flat, square bricks; a thing very agreeable in warm weather, but little suitable to the cold season. To defend them from the piercing cold, which they experience in the northern parts of the empire, the Chinese have devised subterranean furnaces in every direction under the bricks of the floors, and under a kind of platform on which they sleep, so that the heat diffused by the tubes produces in the apartment the temperature desired. The fire is kept up night and day in the outer stove or furnace without the smallest danger to the buildings.

A monument has just been erected at Staindrop to the memory of the Duke of Cleveland, the work of Sir Richard Westmacott, which consists of a recumbent figure, with bas reliefs emblematic of the virtues, surrounding the altar-tomb whereon it rests. We hear that the sculptor himself values it as one of the best of the works which he has executed. Sir Richard declines, we understand, competing for the Holland Monument.

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